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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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August 31, 2007

Ms. Shirley J. Olinger, Acting Manager
Office of River Protection
United States Department of Energy
P.O. Box 450, MSIN: H6-60
Richland, Washington 99352

Mr. William S. Elkins, Project Director
Bechtel National, Inc.
2435 Stevens Center Place, MSIN: H4-02
Richland, Washington 99354

Re: Submittal of Hanford Facility RCRA Permit Modification Notification Form 24590-HLW-PCN-ENV-07-001; Class ¹1 Modification to the Hanford Facility Dangerous Waste and Resource Conservation and Recovery Act (RCRA) Permit for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit 10 (Waste Treatment and Immobilization Plant), WA7890008967

Dear Ms. Olinger and Mr. Elkins:

The Department of Ecology approves the referenced Class ¹1 Modification submitted August 21, 2007, but request issuance of a Document Change Notice (DCN) to incorporate the changes noted below. The approved Hanford Facility RCRA Permit Modification Notification Form is enclosed.

Modification 24590-HLW-PCN-ENV-07-001 submits the following high level waste (HLW) plant item mechanical data sheets for the HLW Facility activated carbon adsorbers (HOP-ADBR-00001A/B and HOP-ADBR-00002A/B).

- Mechanical Data Sheet Activated Carbon Adsorber, 24590-HLW-MVD-HOP-00015, Revision 1
- Mechanical Data Sheet Activated Carbon Adsorber, 24590-HLW-MVD-HOP-00016, Revision 1

Please issue a DCN addressing the following errors identified on the data sheets. We require the data sheets be corrected prior to incorporating the next revision into the Permit.

- Change Item B in the Process Notes box on Mechanical Data Sheet 24590-HLW-MVD-HOP-00016 to read "Allowable pressure drop is for both carbon beds HOP-ADBR-00002A and B operating in series."
- Delete the cancelled referenced process data sheet, 24590-HLW-M6D-HOP-00001, on both mechanical data sheets.
- Per our meeting with Bechtel engineers on July 18, 2007, update the inlet volumetric flow rates (ACFM Nominal, ACFM Maximum, SCFM Design) stated on page 1 on both mechanical data sheets to reflect the updated calculations in 24590-HLW-M4C-HOP-00011.



Ms. Olinger and Mr. Elkins
August 31, 2007
Page 2

If there are any questions, contact me at 509-372-7882 or Ed Fredenburg at 509-372-7899.

Sincerely,



Brenda Becker-Khaleel
WTP Permit Lead
Nuclear Waste Program

trw/jc
Enclosure

cc electronic w/enc:

John Eschenberg, USDOE
Lori Huffman, USDOE
Tony McKarns, USDOE
Gae Neath, USDOE
Don Sommer, USDOE
William Taylor, USDOE
Brad Erlandson, BNI
Peggy Fisher, BNI
Stan Hill, BNI
Dennis Klein, BNI
Sandi Murdock, BNI
Phil Peistrup, WGI

cc w/enc:

Administrative Record: Tank Waste Treatment Requirements ✓
Environmental Portal
USDOE-ORP Correspondence Control

Quarter Ending September 30,
2007

24590-HLW-PCN-ENV-07-001

Hanford Facility RCRA Permit Modification Notification Form**Part III, Operating Unit 10****Waste Treatment and Immobilization Plant**

Index

Page 2 of 4: Hanford Facility RCRA Permit, Operating Unit 10, Waste Treatment and Immobilization Plant
Update HLW Plant Item Mechanical Data Sheets for the High-Level Waste Facility Activated Carbon
Adsorbers (HOP-ADBR-00001A/B and HOP-ADBR-00002A/B) in Appendix 10.6 of the Dangerous Waste
Permit.

Submitted by Co-Operator:



D. A. Klein

7/23/07

Date

Reviewed by ORP Program Office:



S. J. Dinger

8/17/07

Date

Quarter Ending September 30,
2007

24590-HLW-PCN-ENV-07-001

Hanford Facility RCRA Permit Modification Notification Form

Unit:

Waste Treatment and Immobilization Plant

Permit Part & Chapter:

Part III, Operating Unit 10

Description of Modification:

The purpose of this modification is to update HLW Plant Item Mechanical Data Sheets for the High-Level Waste Facility Activated Carbon Adsorbers (HOP-ADBR-00001A/B and HOP-ADBR-00002A/B) in Appendix 10.6 of the Dangerous Waste Permit. The following source mechanical data sheets are submitted to replace the permit data sheets currently in Appendix 10.6:

- Mechanical Data Sheet Activated Carbon Adsorber (24590-HLW-MVD-HOP-00015, Rev 1)
- Mechanical Data Sheet Activated Carbon Adsorber (24590-HLW-MVD-HOP-00016, Rev 1)

The above mentioned mechanical data sheets include revisions as indicated by revision triangles shown on the documents. The revisions shown are the result of ongoing design (changes from vendor preliminary data to vendor detailed design). The following are the sections affected by changes to the above mentioned mechanical data sheets:

- Incorporation of Environmental Qualification information (New Section)
- Incorporation of Code 1 vendor submittal information
 - Thermal Information
 - Revised maximum heat loss from 0.5 Kw (per unit) to 5 Kw (per unit)
 - Activated Carbon Data
 - Revised the type of carbon for the guard bed from Desomix G-10 to Desomix ZA-37
 - Revised the activation element from sulfur to sulfur compounds for the primary bed and from powdered coke & hydrated lime to unimpregnated activated charcoal for the guard bed
 - Revised the carbon media form from spheres to granular for the guard bed
 - Bulk density is revised from 0.48 g/cc (30 lbs/ft³) to 0.57 g/cc (36 lbs/ft³) for the primary bed and from 0.85 g/cc to 0.57 g/cc (36 lbs/ft³) for the guard bed
 - Residence time is revised from 2.9 to 6 (at design flow rate in SCFM) for the primary bed and from 1.45 to 3 (at design flow rate in SCFM) for the guard bed
 - Total volume of carbon has been clarified to be per vessel and is revised from 200 ft³ to 220 ft³ for the primary bed and from 100 ft³ to 110 ft³ for the guard bed
 - Total weight of carbon has been clarified to be per vessel and is revised from 6590 lbs to 7920 lbs for the primary bed and from 5600 lbs to 3960 lbs for the guard bed
 - The face velocity through the carbon is revised from 34.5 fpm to 16.67 fpm (at design flow rate in SCFM) for both the primary bed and guard bed
 - House/Vessel
 - Revised the material/thickness from 1/4 inch to 3/8 inch
 - Vessel dimensions are revised from 132.5"x96.5"x156" to 138"x112"x156"
 - Revised the total weight of the vessel from an estimated 15,000 lbs to an estimated 22,670 lbs per vessel
 - Revised the weight of the vessel with carbon from 28,000 lbs to 34,550 lbs
 - Design pressure is revised from -80 in-WG to -82 in-WG and added a positive design pressure of 126 in-WG
 - Revised the operating pressure from -51 in-WG to -18.1 in-WG
 - Design temperature is revised from 275 F to 250 F
 - Revised the housing insulation material thickness from 4-6 inches to 7 inches on sides,

Quarter Ending September 30,
2007

24590-HLW-PCN-ENV-07-001

- 1 inch over stiffeners
 - Revised the unloading on/off valve from 4 to 8 per vessel and from 4 inch to 8 inch size
- Discharge Filter
 - Filter material is revised from microglass fibers to microglass paper
 - Clarified filter frame material is type 316
 - Revised dimensions of filter from 24" x 24" x 4" to 23 3/8" x 23 3/8" x 3 3/4"
 - Revised the weight of the filter from 10 lbs to 15 lbs
 - Revised the maximum allowable temperature from 300 F to 250 F
- Connecting Pipe
 - Revised the material/thickness from 0.188 inches to 0.25 inches
 - The total length of piping is revised from 50 ft to 70 ft
 - The weight of the valve is revised from 150 lbs to 143 lbs
 - Revised the valve manufacturer from Ionex to Centerline Valves
 - Removed the option of using electric actuators
 - Revised actuator manufacturer from Rotech to Hi-Tork
 - The minimum actuator operating pressure changed from 100 to 80
 - Revised the opening time from less than 5 seconds to less than 10 seconds
 - The required instrument air supply is revised from less than 1 to 2 SCFM per actuator
 - The recommended piping insulation material thickness is revised from 4-6 inches to 1 inch
- Construction Data
 - Operating weight of the unit (2 vessels) is revised from 56,000 lbs to 69,100 lbs
 - Full water flood weight of unit (2 vessels) is revised from 89,000 lbs to 114,100 lbs
 - Shipping weight is revised from 56,000 lbs to 71,500 lbs

There are no outstanding change documents associated with these mechanical data sheets.

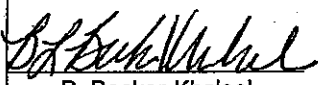
Appendix 10.6					
Replace:	24590-HLW-MVD-HOP-P0015, Rev. 0	With:	24590-HLW-MVD-HOP-00015, Rev. 1		
Replace:	24590-HLW-MVD-HOP-P0016, Rev. 0	With:	24590-HLW-MVD-HOP-00016, Rev. 1		
WAC 173-303-830 Modification Class: ^{1 2}		Class 1	Class ¹ 1	Class 2	Class 3
Please mark the Modification Class:			X		
Enter Relevant WAC 173-303-830, Appendix I Modification citation number:		N/A			
Enter wording of WAC 173-303-830, Appendix I Modification citation:					
In accordance with WAC 173-303-830(4)(d)(i), this modification notification is requested to be reviewed and approved as a Class ¹ 1 modification. WAC 173-303-830(4)(d)(ii)(A) states, "Class 1 modifications apply to minor changes that keep the permit current with routine changes to facility or its operation. These changes do not substantially alter the permit conditions or reduce the capacity of the facility to protect human health or the environment. In the case of Class 1 modifications, the director may require prior approval."					

¹ Class 1 modifications requiring prior Agency approval.

² If the proposed modification does not match any modification listed in WAC 173-303-830 Appendix I, then the proposed modification should automatically be given a Class 3 status. This status may be maintained by the Department of Ecology, or down graded to a Class ¹1, if applicable.

Quarter Ending September 30,
2007

24590-HLW-PCN-ENV-07-001

Modification Approved: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No (state reason for denial)	Reviewed by Ecology:
<u>Reason for denial:</u>	 8/31/07 B. Becker-Khaleel Date